REMARKS

The claims of the application have been amended significantly, both to deal with the objections raised by the Examiner in paragraphs 1-8 of the Office Action, and also to deal with the substantive rejections set forth in paragraphs 9-30. As now presented, it is believed that the claims are clearly directed to allowable subject matter and that the application is otherwise in condition for formal allowance.

Claim 22 has been amended with particular reference to providing proper antecedent bases for various terms utilized in the claims. The heating means are now characterized as a "first" heating means and a "further" heating means to eliminate possible confusion. Additionally, claim 22 does not call for a "heating layer", but calls for "the layer of composite material, after heating thereof,".

With respect to paragraph 4 of the Office Action, the terms "the structural member", "the hot gas" both have proper antecedents in the original claim. "A structural member" is referred to in line 3, and "hot gas" is referred to in line 9. In line 13, "the opposite side" has been changed to "an opposite side".

Claim 25 has been amended to specify that the layer of composite material is of tubular form and has an inside and an outside. The central portion is now characterized as having inner and outer members positioned respectively inside and outside of the layer of composite material, with one of the inner and outer members having the "first" heating means and the other the "further" heating means so that all of the elements are now clearly defined and provided with proper antecedent bases.

Claim 26 has been corrected by reference to "said other" member, which in turn is defined in claim 25.

Claim 27 has been corrected, with reference to the amendments to claim 25, to call for the "first" heating means to be provided on the inner member, such that the composite material is heated "from the inside thereof". A similar correction has been made to claim 29, referring to the fact that the outer member has the "first" heating means, such that the layer of composite material is heated from the outside thereof.

With respect to paragraphs 26-28 of the Office Action, claims 30-33 have been amended to avoid limitations defined by intended use and instead specifying "means are provided for directing hot gas" (claim 30) and "a source of compressed air" (claims 31-33).

As now presented, it is believed that the claims clearly distinguish over the prior art and are clearly unobvious over the applicant's prior published application (which has now matured into U.S. patent 7,306,693, granted December 11, 2007).

The uniquely characterizing feature of the applicant's present invention relates to the provision of a heating system (in combination with the other features of the apparatus) which forces hot gas under pressure through a layer of permeable composite lining material using a structure that (a) provides for an air gap on the side of the composite material opposite that from which the hot gas is directed and (b) includes a "further heating means" which is on the same side as a the air gap to both enhance and make more uniform the heating of the composite material. The "further" heating means can be either passive or active and either inside or outside of the fabric tube.

The Examiner has entered an obviousness-type double-patenting rejection over the applicant's U.S. patent 7,306,693, indicating that this rejection could be obviated by terminal disclaimer. Applicants request reconsideration of this double-patenting rejection inasmuch as there is no hint in the Weatherby et al. patent

7,306,693 of a "further" heating means. The Examiner has combined the applicant's prior patent with the Miyazaki et al. Japanese publication to support the obviousness-type double-patenting rejection. However, it is submitted that Miyazaki et al. does not have the kind of "further" heating means called for in applicant's claims.

There is no feature in Miyazaki et al. of passing hot gases through a composite layer while maintaining an air gap and providing for a "further" heating on the air gap side of the composite material. Clearly, in Miyazaki et al., the liner tubing is not formed of a permeable material, as evidenced by the fact that it is expanded against the wall of the piping by compressed air (Figs. 2-4). In Fig. 4, it is expanded in advance of the external heating means by compressed air. In Fig. 3, the liner is pressed against the external heating means by compressed air acting on the inside of the liner directly opposite the heating means, but there are no hot gases passing through the liner.

In the version of Miyazaki et al. shown in Figs. 1 and 2, there are heaters positioned inside and outside of the liner, as it passes over the pig. However, this does not in any way correspond with the applicant's claimed structure in which (a) hot gases pass through the liner, (b) an air gap is maintained on the gas-exiting side of the liner, and (c) a "further" heating means is provided on the air gap side. The simultaneous "further" heating and the maintenance of an air gap of course require that the "further" heating means be somewhat spaced from the wall of the liner, which is obviously not the case with Miyazaki et al., where the liner is either pressed against the heaters by the action of the pig or is pressed against the outer heater by internal compressed air, as in Figs. 3 and 4.

It definitely would not be "obvious" to combine Miyazaki et al. with the applicant's earlier patent 7,306,693, because in the applicant's earlier patent there

are provisions for an air gap, a feature which is not disclosed in and is indeed incompatible with the disclosure of Miyazaki et al.

The Examiner has also proposed to combine the Boyce '312 patent with Miyazaki et al. as a basis for rejecting applicant's claims. In this respect, it is believed that the Examiner has misinterpreted the Boyce patent and has applied it in a way that is not justified by its disclosure. Importantly, there is no provision in Boyce for an air gap, which is essential to the applicant's system. In Boyce, the roller 7 at the front positions the tube against the pipe wall (column 5, lines 5-10). Slight air pressure is also applied to inflate the liner against the surface of the pipe (column 5, lines 8-10). Indeed, the entire disclosure of Boyce is inconsistent with providing an air gap. The embodiment of Fig. 4, for example, utilizes an inflatable bag 10, which is inflated to expand the liner 5 into contact with the pipe wall 4. In the case of either Fig. 3 or Fig. 4, the relevant principles involve first pressing the liner into contact with the pipe wall, and thereafter heating the liner while it is in contact with the pipe wall. At column 4, lines 54-56, Boyce states that "[O]nce in position within the host pipe 4, the liner 5 is opened out and pressed into contact with the pipe wall. Heat and pressure is then applied to the liner...". Although Boyce indicates that the heating means provided may be either a radiative heater or a hot gas heater, the provision of a hot gas heater would not change the fact that the liner is first pressed into contact with the pipe wall and thereafter heated.

Combining Boyce with Miyazaki et al. does not provide for the critical combination of an air gap and a "further" heating means on the air gap side. Neither Boyce nor Miyazaki et al. involves an air gap.

Applicant does not claim to have originated the concept of heating liners from both the inside and the outside. That is quite clearly shown in Miyazaki et al. Nevertheless, what is totally absent from Miyazaki et al. and the other prior art is the concept of providing the combination of (a) heating of the liner by passing of hot

gases through a permeable liner, (b) maintaining an air gap on the side of the liner through which the hot gases are emerging and (c) providing for a "further" heating means on the air gap side of the liner. This is both unique and unobvious, and clearly justifies the allowance of the claims herein the form now presented.

Respectfully submitted,

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